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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/602,635

06/25/2003

Dae-hyeok Im

1293.1715

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01/31/2005

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EXAMINER

NGUYEN, LAMSON D

ART UNIT

PAPER NUMBER

2861

DATE MAILED: 01/31/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

AK

Office Action Summary

Application No.

10/602,635

Applicant(s)

IM ET AL.

Examiner

Lamson D Nguyen

Art Unit

2861

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Amendment dated 11/17/04.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 6, 15, 16 and 19 is/are rejected.
- 7) ☒ Claim(s) 2-5, 7-14, 17-18, and 20 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 6, 15-16 are rejected under 35 U.S.C. 102(b) as being anticipated by Wetchler et al. (6,196,663).

Wetchler et al teach a color printing method comprising:

Claim 1:

- detecting a residual amount of each color ink (column 7, lines 25-29)
- comparing the residual amount of each color ink with a predetermined standard residual amount and determining whether the residual amount of at least one ink is less than the predetermined standard amount (column 7, lines 7-9)
- if the residual amount of the at least one color ink is less than the predetermined standard residual amount, selecting one of a normal printing mode in which the color image is printed using all of the color inks and an ink saving printing mode in which the color image is printed using at least one of the color inks having a residual amount greater than the predetermined standard amount (column 8, lines 55-67; column 9, lines 31-41 teach cyan

and magenta inks are used instead of black ink or cyan and magenta can be mixed with black ink)

- printing the color image according to the selected printing mode (figure 7, print image in step 84)

Claim 6:

- wherein in the selection of the printing mode, a warning message is displayed when the residual amount of the at least one color ink is less than the predetermined standard residual amount (column 9, lines 57-62)

Claim 15:

- printing the image using all of color inks when the residual amount of each of the color inks is greater than the predetermined standard residual amount (figure 7 teach detecting the amount of each ink, upon which when any amount of usage of any ink is more than the allowed or predetermined amount is detected, an imbalance condition is noted, followed up by adjusting the usage of other inks. Therefore, it is inherent that if the imbalance condition was not detected, then all inks are used as normal)

Claim 16:

- selecting a printing mode according to an importance of the color image to be printed and according to the residual amount of each of the color inks being greater than the predetermined standard residual amount and (column 9, lines 31-55)
- printing the color image corresponding to the print mode selected, wherein the printing mode comprises one of: a normal printing mode where the color image is printed using black ink and all of the color inks, where the residual amount of the black ink and all of the color inks is greater than the predetermined standard residual amount (it is inherent when there is no imbalance condition present the printer would use all colors for printing)

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wetchler in view of Yamamoto.

Wetchler et al teach all claimed features except:

- displaying a printing mode selection window when the residual amount of at least one of the color ink is less than the predetermined amount

Yamamoto (applicant's admitted prior) teaches displaying a mode selection of selecting another ink when the black ink is out (abstract).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the invention of Wetchler to incorporate the teaching of displaying a printing mode taught by Yamamoto for the purpose of readily choosing an option of substituting for a run-out ink.

Allowable Subject Matter

Claims 2-5, 7-14, 17-18, and 20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is an examiner's statement of reasons for allowance:

- The primary reason for allowance for claims 2, 3 is the inclusion of the limitation of displaying a print mode selection window when the residual amount of at least one of the color ink is less than the predetermined standard residual amount. It is this limitation, either alone or combined, that has not been found, taught, or suggested by prior art.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should

preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Response to Arguments

Applicant's arguments filed 11/17/04 have been fully considered but they are not persuasive.

On page 2, paragraph of the applicant's argument, the applicant argues that Wetchler et al do not teach comparing residual amount of each ink color with a predetermined standard amount, but rather an imbalanced condition where ink usage deviates from a predetermined use rate. The examiner disagrees. Clearly, the ink usage rate is associated with an amount of ink being used. This fact is found in column 7, lines 21-29, where it is stated that "this usage information is determined by the used of an ink level sensor..... The ink level sensor provides information related to the remaining ink in the ink containers 18 from which the controller 26 can determine whether an imbalanced condition has occurred."

On page 2, paragraph 3, the applicant argues that Wetchler et al do no teach a normal printing mode. However, claim 1 claims "selecting one of a normal printing mode and an ink saving mode", clearly stating selecting either one method, in which case Wetchler et al teach an ink balancing method or the applicant's "ink saving mode".

Conclusion

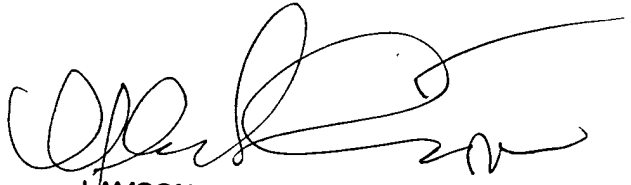
THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lamson D Nguyen whose telephone number is 571-272-2259. The examiner can normally be reached on 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Meier can be reached on 571-272-2149. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


LAMSON NGUYEN
PRIMARY EXAMINER
01/27/05